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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,867	04/06/2006	Stefan Hein	APP10 P-307	5083
7590 09/03/2009 Marcus P Dolce Price Heneveld Cooper De Witt & Litton 695 Kenmoor SE Post Office Box 2567 Grand Rapids, MI 49501			EXAMINER BASKIN, JEREMY S	
			ART UNIT 3753	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/574,867

**Applicant(s)**

HEIN, STEFAN

**Examiner**

Jeremy S. Baskin

**Art Unit**

3753

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regard to Claim 14, line 8, and Claim 31, line 11, the limitation "vacuum tight" is not disclosed or defined within the written description of the instant application as a means of describing the contact pressure between the sealing body 7 and sealing surface 5. Furthermore, a clear definition of the limitation in context cannot be ascertained from the claim itself.

The claim has been examined on the merits with the term "vacuum" defined as "a space partially exhausted (as to the highest degree possible) by artificial means (as an air pump)." (See "vacuum." Merriam-Webster Online Dictionary. 2009. Merriam-Webster Online. 27 August 2009 <<http://www.merriam-webster.com/dictionary/vacuum>>).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14, 15, 17-20, 22-24, 27-35, 39, and 40 are rejected under 35 U.S.C. 102(b) as anticipated by Dupuis (3,351,348).

In regard to Claim 14, Dupuis teaches a housing 20 having an opening 11 that is to be traversed by a flexible band substrate 38. A movable sealing body 30 cooperates with a sealing surface 12-15. In order to close the opening, the movable sealing body clamps down on the edge 15 of sealing surface with the flexible band substrate in between (Figure 2). The sealing surface defines the rectangular opening in a frame-like fashion. The movable sealing body is able to tightly close the rectangular opening by the pressure differential created by the vacuum chamber 5 and pump 7 (col. 3, lines 50-61).

In regard to Claim 15, the band substrate is forced through the movable sealing body against a sealing edge 15. A tangent of the movable sealing body forms an obtuse angle with longitudinal direction of the substrate (Figure 2).

In regard to Claims 17, 20, 23, and 24, the movable sealing body is provided with an elastically flexible surface material 35.

In regard to Claims 18, 19, 22, and 33, the movable sealing body comprises a cylindrical roll 32.

In regard to Claim 27, the movable sealing body 30 is rotatably mounted via shaft 34.

In regard to Claims 28 and 34, the movable sealing body is moved between an inactive and a closed position by a power drive (24, drive mechanism, col. 3, lines 43-45). Furthermore, the movable sealing body is movable via the power drive mechanism created by the shafts 33, the pump 7, and source 24 (col. 3, lines 36-45).

In regard to Claim 29, the power drive is located at the housing via 25 in Figure 1.

In regard to Claim 30 and 35, the movable sealing body is firmly tightened against the sealing surface at a desired level of force by the accumulation of pressure within chamber 17 and chamber 5 (col. 3, lines 50-55).

In regard to Claim 31, Dupuis teaches a processing plant (Figure 1) with at least one evacuable chamber 5, a chamber for winding up or unrolling the substrate (area possessed by rollers 40), and an opening 11 connecting the two chambers for the substrate to guide through. An air lock valve 17 is provided at the opening. The air lock valve possesses a housing 20 and one movable sealing body 30 that clamps onto a sealing surface 12-15 with the substrate 38 in between. The sealing surface defines the rectangular opening in a frame-like fashion. The movable sealing body is able to tightly close the rectangular opening by the pressure differential created by the vacuum chamber 5 and pump 7 (col. 3, lines 50-61).

In regard to Claim 32, the movable sealing body 30 and the sealing surface 12-15 can be turned to any chamber to be ventilated as desired.

In regard to Claims 39 and 40, the movable sealing body 30 opens and closes the opening formed by the sealing surface to wholly overlap the opening via 35 as seen in Figure 2.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dupuis in view of Seminski (3,807,058).

Dupuis fails to teach that the sealing surface comprises a planar, flexible material with a wall section in a frame-like fashion in an area surrounding the border of the opening.

Seminski discloses a sealing arrangement for an enclosed chamber. Seminski teaches a sealing surface 3 possessing a wall section 8 that forms a frame-like section in an area surrounding the opening. The seal is tightly connected to the body 2 so as to allow the device to perform its intended function. Seminski teaches that it is known in the art to create the seal out of a flexible material (col. 1, lines 43-45).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate a flexible seal that forms a frame-like section around the opening in a band processing lock valve, as taught by Seminski, so as to provide a wiping action on at least one surface of the band substrate to clean it as it enters or exits the system.

7. Claims 30 and 35 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Dupuis in view of Stahl (2,894,483).

In regard to Claims 30 and 35, Stahl discloses a vacuum roller apparatus. Stahl teaches where a vacuum chamber 78 is maintained by a vacuum source 88 and an accumulator 87.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Dupuis, an accumulator in between the vacuum source and the vacuum chamber, as taught by Stahl, so as to maintain the pressure within the vacuum chamber when the vacuum source is deactivated.

8. Claims 16, 21, 26, 36-38, 41, and 42 and alternatively Claims 28, 29, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dupuis in view of Yamazaki et al. (4,808,444).

In regard to Claims 16, 21, 26, 28, 29, 34, 36-38, 41, and 42, Dupuis fails to specifically teach where the movable sealing body is a single cylindrical roll that engages an arcuate sealing surface that has a radius larger than the cylindrical roll. Dupuis fails to further teach where the movable body is spaced from the substrate and sealing surface when in the inactive position.

Yamakazi discloses a sealing roller for flexible substrate handling. Yamakazi teaches where a single cylindrical roller 1 engages an arcuate sealing surface 4 that has a radius larger than the substrate. The roller is movable via a power drive mechanism 5, 6, 7 so as to space the roller from the substrate and sealing surface (col. 4, lines 18-31).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to replace the movable roller and sealing surface of Dupuis with the movable roller and sealing surface of Yamakazi so as to account for substrates of varying thicknesses and for the deposition of a desired material onto the substrate before it enters the vacuum chamber.

***Response to Arguments/Remarks***

9. Applicant's arguments filed 21 May 2009 have been fully considered but they are not persuasive. Applicant's amendments to Claim 14 and 31 have failed to overcome the rejection based on the prior art of Dupuis (3,351,348) under 35 U.S.C. 102(b). Applicant asserts that Dupuis "does not disclose an opening that is closed vacuum tight by pressing at least one movable sealing body upon a sealing surface and/or upon a band substrate traversing the opening..." (REMARKS, page 9, para. 2). However, the limitation "vacuum tight" is broad and does not patentably distinguish the claim over the prior art. Dupuis teaches where a movable sealing body 30 is pressed upon a sealing surface 12-15 so as to maintain a vacuum chamber 5, or partially evacuated space, provided by a vacuum source or pump 7. Therefore, the movable sealing body is pressed upon the sealing surface vacuum tight.

Furthermore, Dupuis teaches where an extremely slight escape or leakage of an inert gas from source 24 is allowed to pass into the vacuum chamber 5 to promote bright metallization onto a strip of material at a reasonable vacuum operating pressure (cols. 4-5, lines 71-2). Since the rollers 22, 23 provide for a sealed enclosure (col. 3, lines 12-16), the elimination of the advantageous feature provided by the inert gas source 24 would have been obvious to one of ordinary skill if ever the feature was not desired. See MPEP 2144.04 Section II.

Furthermore, the limitation "for closing the opening vacuum tight during a closing phase of the air-lock valve" in Claim 31, lines 10-11, is a recitation of functional language. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP 2113.



Applicant's arguments with respect to Claims 28-30, 34, and 35 are not persuasive since the Applicant provides no evidence as to why the inert gas source and vacuum source is not a power drive and why the accumulation of pressure within chambers 5 and 7 is not an accumulator. A power drive is a broad limitation and is read as any mechanical means of moving the movable member between an inactive and closed position. An accumulation of pressure within each of the chambers is read as an accumulator since the pressure differential across the system necessarily exists upon the deactivation of the inert gas source and vacuum source.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy S. Baskin whose telephone number is (571) 270-7421. The examiner can normally be reached on Monday through Friday, 7:30AM to 5:00PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. B./  
Examiner, Art Unit 3753

/Robin O. Evans/  
Supervisory Patent Examiner, Art Unit 3753